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P21550.A05

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Torben JONSSON et al.

Appl. No : 09/926,475
(National Phase of PCT/DK00/00252)

I.A. Filed : May 12, 2000

For : FOOD COMPOSITIONS WITH HIGH SOLIDS CONTENT, A METHOD FOR ITS PREPARATION AS WELL AS THE USE OF CARRAGEENANS FOR GELLING A FOOD COMPOSITION

Confirmation No. 5677
Group Art Unit : 1761
Examiner : Wong
Customer No. 7055

DECLARATION UNDER 37 C.F.R. 1.132 OF DORTHE PEDERSEN

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Dorthe Pedersen, being duly warned, declare that:

1. I am citizen of Denmark residing in Cypresvej 13, Strocby - Egede, DK-4600 Køge

2. I hold a degree from Technologisk Institut (Laboratory technician)

3. For about 30 years, I have been a laboratory technician working with hydrocolloids at CP Kelco ApS.

4. I am familiar with the invention of U.S. Patent Application No. 09/926,475.

5. It has been brought to my attention that in the above U.S. Patent Application No. 09/926,475 the Examiner rejected claims 1-39 under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Doherty et al. (hereinafter "Doherty", U.S. Patent No. 5,607,716. In particular, the rejection asserts that:

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Doherty et al teach a food composition comprising soluble solids in the claimed ranges, a sweetener system (e.g., high fructose corn syrup), carrageenan, and water (see entire document, especially column 3, lines 24-49). In Example 1, Doherty et al teach a caramel composition comprising 53% soluble solids of which 84% are high fructose corn syrup solids, no sucrose, 0.45% carrageenan, and water. Doherty et al also teach that the carrageenan is blended into the hot corn syrup, the other ingredients are added and the resulting mixture is cooked to adjust the solids content (see column 6, lines 5-12).

The claims appear to differ as to the gelation temperature.

The gelation temperature is a consequence of the composition and thus a value below 95 degrees C would be inherent and/or obvious to that of Doherty et al.

7. I have conducted testing that show differences between the invention disclosed and claimed in the above-identified application as compared to compositions disclosed by Doherty.

8. The composition for testing of Doherty was prepared by following Example 1 of Doherty for Regular Caramel to the extent possible utilizing the following ingredients:

Ingredient	Regular Caramel(%)	Regular Caramel(g)
Non-fat milk solids	7.5	75
High fructose corn syrup (Cerestar 1750- 42% fructose)	58.0	580
Kappa Carrageenan	0.45	4.5
Salt	0.35	3.5
Water	31.2	312
Fat (butter)	2.0	20
Emulsifier	0.5	5
Total	100.00	1 kg

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The carrageenan was dispersed in a solution of the non-fat milk solids and water, and the remaining ingredients were added (Appendix I, Fig. 1). The mixture was heated to boiling at 116°C (Appendix I, Fig. 2), and is pourable at 116°C. The mixture had a much higher viscosity at 100°C (Appendix I, Fig. 3). Still further, at 95°C, the mixture could not be poured (Appendix I, Fig. 4).

9. The viscosity of the caramel composition of Doherty is adequately low at 116°C. However, upon cooling to 95°C, the viscosity increased excessively and the composition could not be deposited in molds at 95°C to obtain an acceptable final product (Figs. 5 and 6).

10. The composition of Doherty produced in paragraph 8 above was subjected to analysis of elastic modulus, G', and viscous modulus, G", and a copy of the graphs of G' and G" is attached as Appendix I, Fig. 7. The elastic modulus ,G', and viscous modulus, G" were measured on a HAAKE™ Rheometer, RS 100 using the settings - Gradient 1°C/min, 0.4640 Hz, 95°C - 65°C, t=1800 s, 0.50 Pa, 65°C - 35°C, t=1800 s, 2.50 Pa. The graphs of G' and G" show that the two graphs do not intersect at a temperature of <95°C, which means that the gelation temperature, determined as the intersection of the graphs of G' and G" is >95°C.

11. In contrast to the composition of Doherty which has a gelation temperature, which is determined as the intersection of the graphs of G' and G", and is >95°C, the gelation temperature of the food composition of the presently claimed invention, determined as the intersection of the graphs of elastic modulus ,G', and viscous modulus, G", measured on a HAAKE™ Rheometer, RS 100 using the settings - Gradient 1°C/min, 0.4640 Hz, 95°C - 65°C, t=1800 s, 0.50 Pa, 65°C - 35°C, t=1800 s, 2.50 Pa, is < 95°C.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dorthe Pedersen

18.06.04
Date

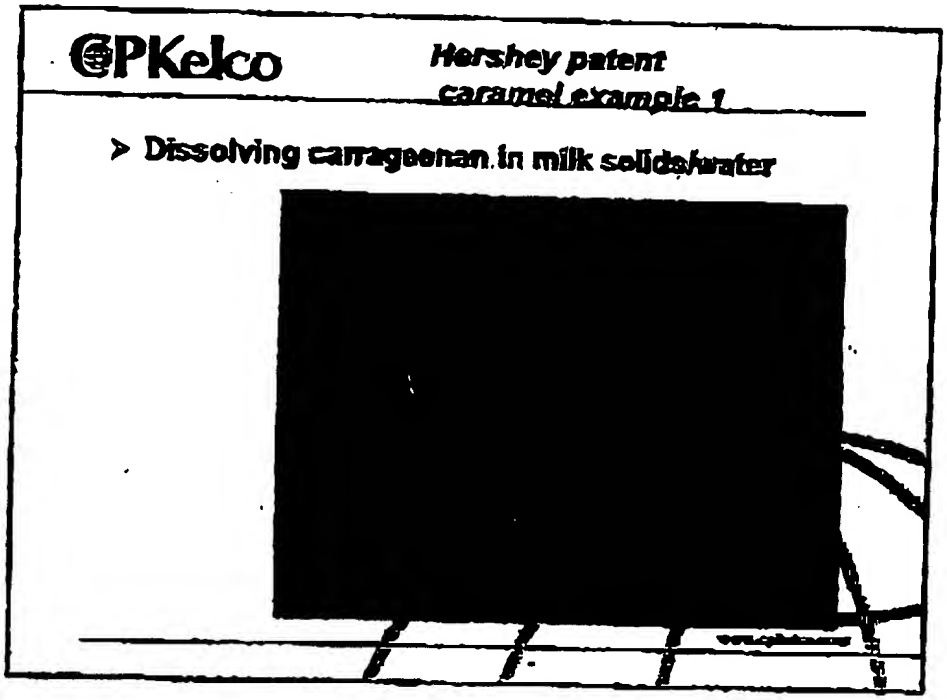
CPKelco
Hershey patent
caramel example 1
➢ Dissolving carrageenan in milk solids/water

FIG. 1

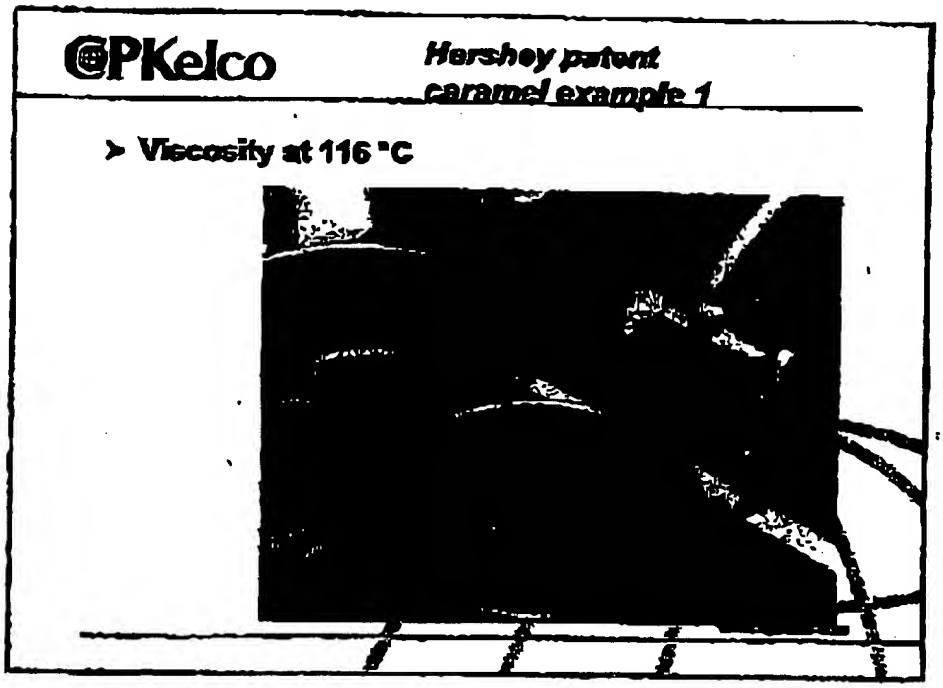
CPKelco
Hershey patent
caramel example 1
➢ Viscosity at 116 °C

FIG. 2

App I(2)

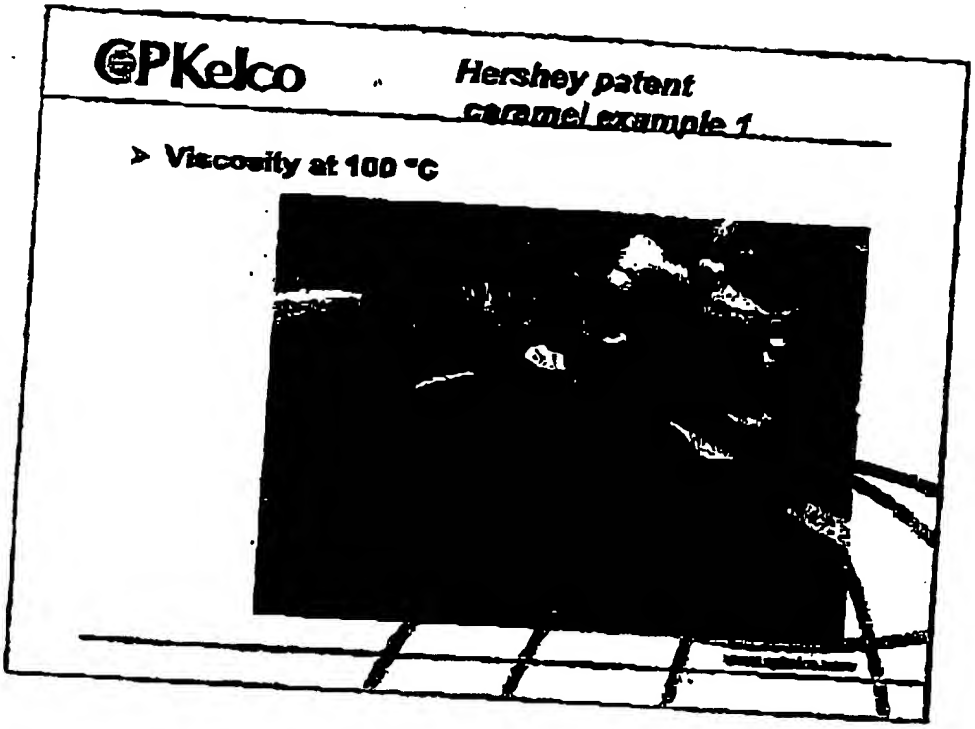

FIG. 3

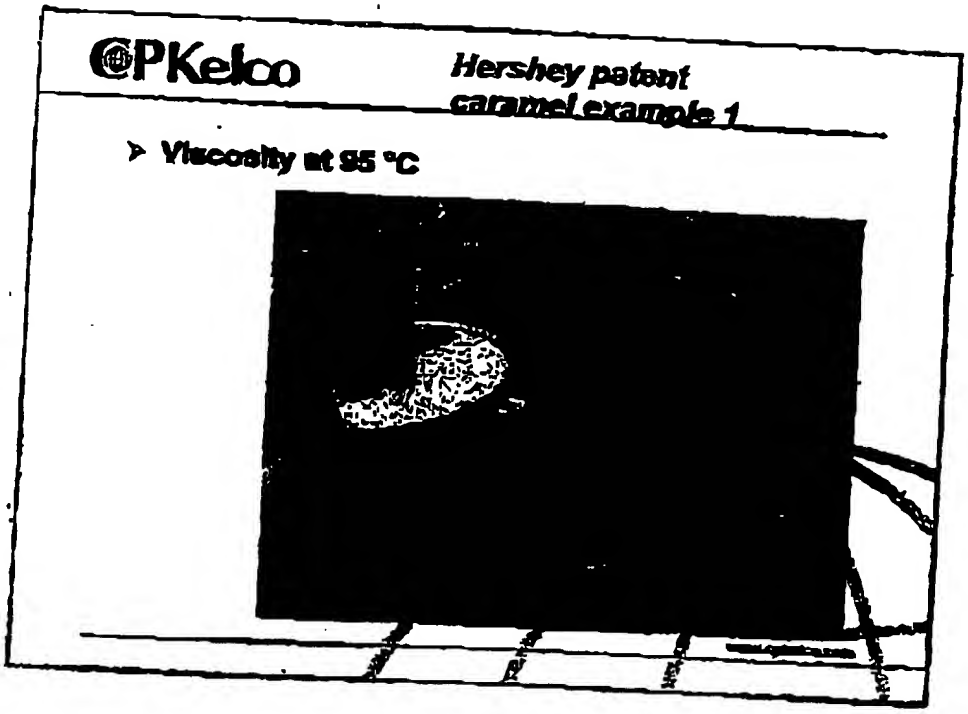

FIG. 4

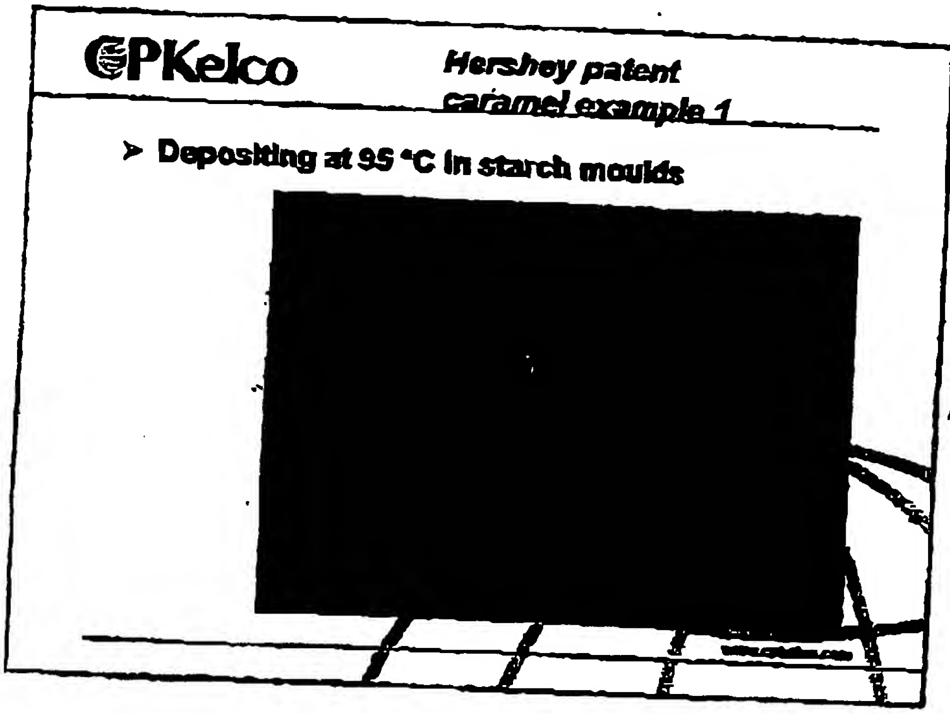
CPKelco
Hershey patent
caramel example 1
➢ Depositing at 95 °C in starch moulds

FIG. 5

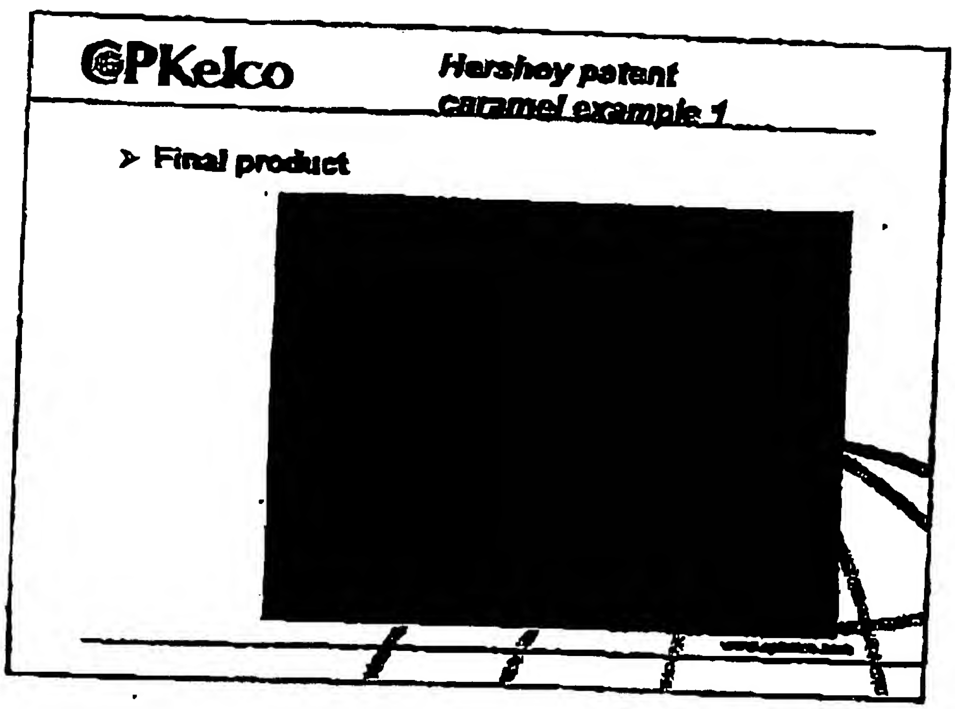
CPKelco
Hershey patent
caramel example 1
➢ Final product

FIG. 6

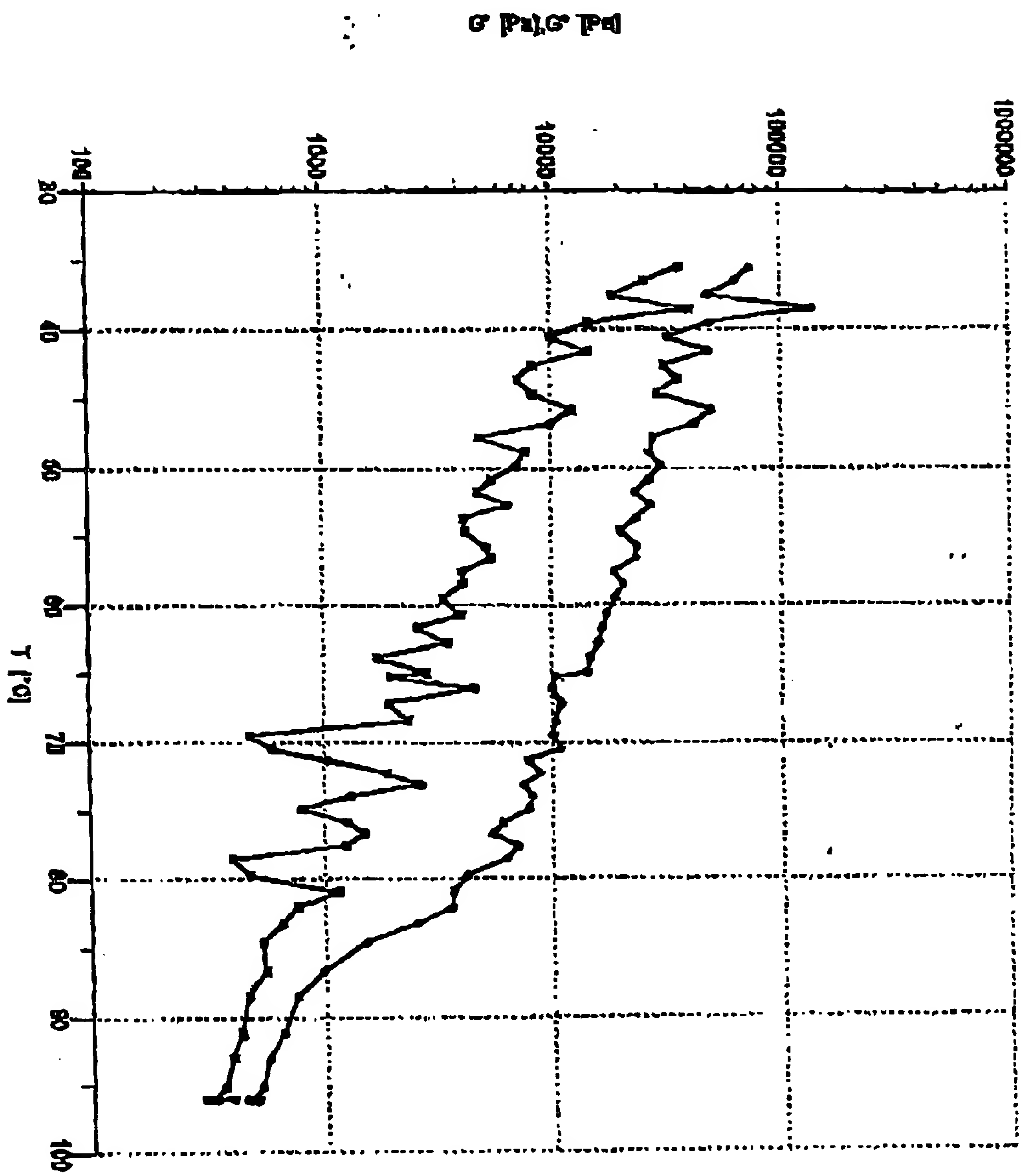
G' [Pa],G" [Pa]
100
1000
10000
100000
1000000
T [°C]
20
40
50
60
70
80
90
100

FIG 7